AMENDMENTS

Amendments to the Claims

Please amend the claims according to the following listing of the claims.

Listing of the claims

1. – 26. (canceled)

27. (previously presented) A multipath access system for use in an automated immunoassay analyzer, comprising:

(a) a transport device, comprising

(i) means for holding a plurality of vessels, and

(ii) means for moving the vessel holding means in a continuous loop,

(b) a transfer station, comprising a means for moving vessels to and from the vessel holding means,

(c) a programmable controller, programmed to determine an individual path along the continuous loop for each of the vessels,

wherein the determination of each path is based on a resource requirement associated with each vessel.

28. (previously presented) The multipath access system of claim 27, wherein the resource requirement associated with each vessel includes one or more tests, operations, and/or assays to be performed in each vessel.

29. (previously presented) The multipath access system of claim 27, wherein the programmable controller is programmed to receive information regarding the resource requirement associated with each vessel, and wherein the paths determined by the controller do not depend on the order in which the controller receives the information.

30. (previously presented) The multipath access system of claim 27, wherein the path determined for at least one vessel, requires the transfer station to move at least one vessel to or from the vessel holding means.

31. (previously presented) The multipath access system of claim 27, further comprising a second transport device comprising second means for holding a plurality of vessels, and second means for moving the vessel holding means in a continuous loop, and wherein the transfer station comprises a means for moving vessels

(i) from the vessel holding means of the first transport device to the vessel holding means of the second transport device, and

(ii) from the vessel holding means of the second transport device to the vessel holding means of the first transport device.

32. (previously presented) The multipath access system of claim 27, further comprising a delivery station for delivering one or more vessels to the transport device.

33. (previously presented) The multipath access system of claim 27, further comprising a pipetting station for adding one or more reagents to a vessel positioned in a vessel holding means.

34. (previously presented) The multipath access system of claim 27, further comprising a wash station for washing vessels.

35. (previously presented) The multipath access system of claim 34, wherein the wash station is combined with the transfer station.

36. (previously presented) The multipath access system of claim 27, further comprising an agitating assembly positioned adjacent to the transport device at a location where at least one test vessel held in a vessel holding means contacts the agitating assembly.

37. (previously presented) The multipath access system of claim 36, wherein the agitating assembly is stationary.

38. (previously presented) The multipath access system of claim 27, wherein the means for moving the vessel holding means is adapted to move the vessels clockwise and/or counterclockwise around the continuous loop.

39. (previously presented) A multipath access system for use in an automated immunoassay analyzer, comprising:

(a) a transport device, comprising

(i) a plurality of vessel holders each for holding a vessel, and

(ii) a mechanism for moving the vessel holders in a continuous loop,

(b) a transfer station, comprising a transfer shuttle, positioned to slide in a direction perpendicular to a portion of the transport device, for moving vessels to and from the vessel holders,

(c) a programmable controller, programmed to determine an individual path along the continuous loop for each of the vessels, wherein the determination of each path is based on a resource requirement associated with each vessel.

40. (previously presented) The multipath access system of claim 39, wherein the transfer shuttle comprises a horizontal support and at least two projecting members, wherein the projecting members project from the horizontal support, and wherein the projecting members are spaced far enough apart to accommodate at least one test vessel therebetween.

41. (previously presented) The multipath access system of claim 39, wherein the transfer shuttle is positioned so that upon sliding in a direction perpendicular to a portion of the transport device, a projecting member of said transfer shuttle contacts a test vessel held in a vessel holder and pushes the test vessel from the transport device.

42. (previously presented) The multipath access system of claim 39, wherein the transfer shuttle is positioned so that upon sliding in a direction perpendicular to a portion of the transport device, a first projecting member of said transfer shuttle contacts a first test vessel held in a vessel holder and pushes the first test vessel from the transport device

into the transfer station, while a second projecting member of said transfer shuttle contacts a second test vessel held in the transfer station and pushes the second test vessel out of the transfer station.

43. (previously presented) The multipath access system of claim 42, wherein the second projecting member contacts the second test vessel held in the transfer station and pushes the second test vessel out of the transfer station into a wash station, into a luminometer subsystem, or into a vessel holder of a second transport device.

44. (previously presented) The multipath access system of claim 42, wherein the transfer station is combined with a wash station.

45. (previously presented) The multipath access system of claim 27, wherein the path determined for each vessel is optimized such that vessels having identical resource requirements travel an equal distance around the continuous loop.

46. (previously presented) The multipath access system of claim 45, wherein for at least one vessel the equal distance comprises the sum of a first distance and a second distance, wherein the first distance is traveled in a clockwise direction around the continuous loop, and
wherein the second distance is traveled in a counterclockwise direction around the continuous loop.

47. (previously presented) A method for controllably moving samples in an automated immunoassay analyzer comprising:
determining an individual path along a first continuous loop for each of a plurality of samples based on a resource requirement for each sample,
optimizing the path determined for each sample such that samples having identical resource requirements travel an equal distance around the first continuous loop,
wherein for at least one sample the equal distance comprises the sum of a first distance and a second distance,

wherein the first distance is traveled in a clockwise direction around the first continuous loop,

wherein the second distance is traveled in a counterclockwise direction around the first continuous loop, and

wherein the path determined for at least one sample includes transferring the sample from the first continuous loop to a second continuous loop.